CTIS 2.0 Tool Installation and User's Guide

November 2006

This document will help you successfully install and use the California Transportation Investment System 2.0 (CTIS2) Tool.

What's New in CTIS 2.0

- Installation is simplified with a self-extracting zip file that includes all supporting documents (e.g., data dictionary, metadata, etc.).
- Updated planned project data from regional transportation plans approved as of Summer 2003 (document dates range from 1999 to 2003).
- Updated programmed project data from the 2004 State Transportation Improvement Program (STIP) and State Highway Operation and Protection Program (SHOPP).
- The data are now supplied in Microsoft (MS) Excel spreadsheet and ArcGIS geodatabase formats. The geodatabase is accessible with MS Access enabling querying and report generation. Shapefiles are still supplied with the Tool and are the data source for each theme.
- Highway points (e.g., interchange projects) and linear events have been combined into a single theme.
- Selected bicycle, pedestrian, and transit projects are now mapped as linear events and are included in the Local (Planned or Programmed) projects themes. (Bicycle, Pedestrian, and Transit projects for which specific location data were not provided are displayed as a point at the county seat.)
- All rail projects, formerly shown as points, are linear.
- "Planned Project Cost Summary by Purpose Chart" has been enhanced with individual colors for each purpose code. (Note: Programmed projects were not coded for purpose in CTIS2.)
- 2000 Census population by county has been added to the "Projects by Population" view.
- Highway symbols are installed automatically and display at zoomed-in, or regional, levels (starting at 1:2,500,000 – as the user zooms in, the symbols will appear).
- Select themes are scale dependent. See "Scale-dependent Display" below. This allows for an uncluttered view of the whole state, but more detail as the user "zooms in" to a specific area.
- Reference data layers from the Caltrans GIS Data Library have been updated. See "New and Updated Reference Data Layers" below.
- Based on user feedback, views and buttons have been streamlined.

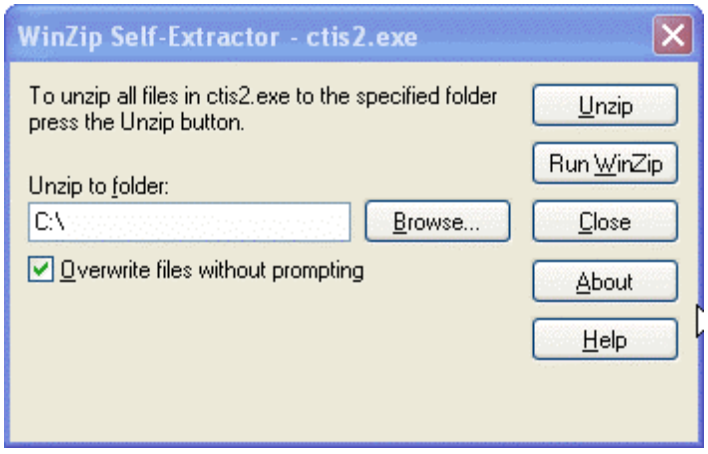
Installation and Configuration of the the CTIS 2.0 Tool*

**Note: The use of the CTIS 2.0 Tool runs on ESRI's ArcView 3.1 or higher. ArcView must be purchased and installed prior installation of the CTIS 2.0 Tool.*

CTIS 2.0 will not run on ArcGIS ArcView; however, the shapefiles are compatible with ArcGIS. The ctis.apr may be imported into ArcGIS ArcView; however, the legend for each theme may not translate exactly as it displays in ArcView 3.x.

Installation

1. Navigate to the CTIS2 website
2. Click on **Download CTIS2** link
3. Save the file to the computer's desktop
4. Navigate to your computers' desktop and double-click on the CTIS2.exe
5. The self-extracting utility is set to create a directory on the computer's C Drive
    - C:/CTIS2.
6. You may select an alternative location and directory name.
    - If you choose to rename the directory from CTIS2, it is important that the directory name not contain any spaces. The install will not work if there is a blank space in the directory name.

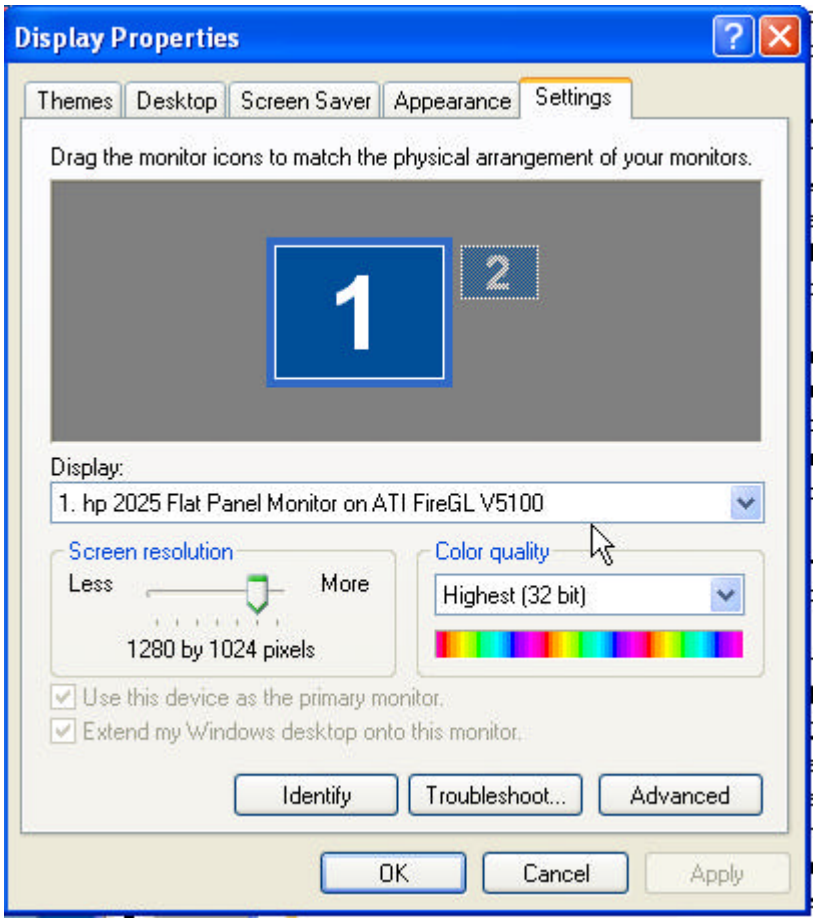


Screen Resolution

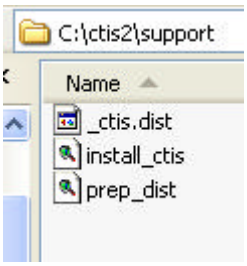
The custom screens and charts for CTIS will display only at the screen resolution setting of 1280 x 1024 pixels or higher.

To check the resolution of your display device do the following:

1. From the **Start** menu, select **Control Panel**
2. Select **Display**
3. In the **Display Properties Dialog**, click on the **Settings** tab
4. Click on the **slider** and move it toward **More** until the configuration is **1280 x 1024** pixels
5. Click **OK**
6. Click **Yes** to accept the changes
7. Close the Control Panel window.

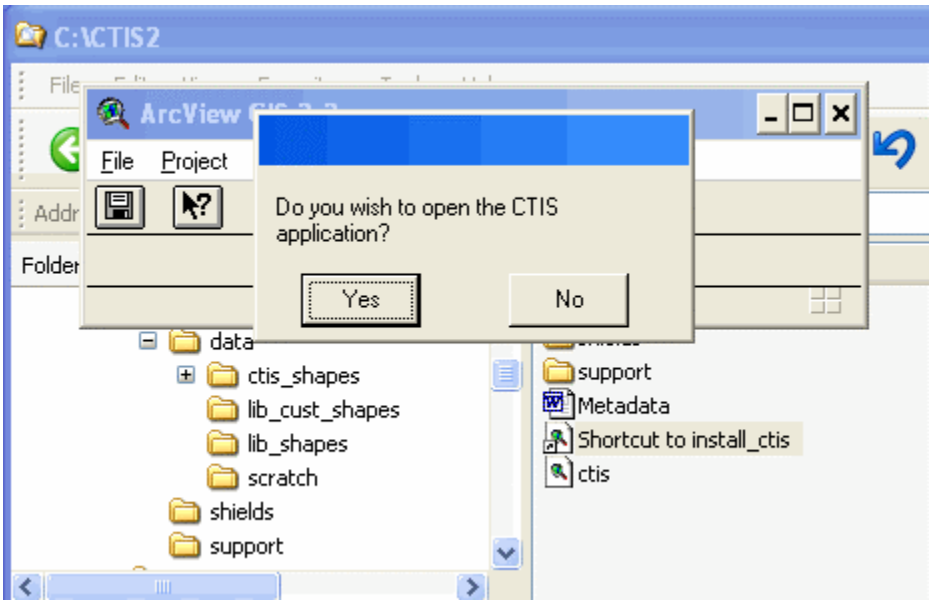


Opening the CTIS2 Tool the First Time



1. Open the **CTIS2 directory**
2. Navigate to the **Support sub-directory**
3. Double-click on the file install_ctis.apr
4. This will start ArcView and configure the Tool for your use

5. This may take a while. During the process you will be asked whether you wish to open the Tool or not. You may click on "no" at this time and the ctis.apr project will be created along with the paths to the data files.



6. From this point on, you may open the project by clicking on the ctis.apr project file.
   - If you make any changes to the project and desire to save the changes
   - **Save it As** a different project name.
   - The ctis.apr may be recreated by performing the **install_ctis.apr** routine again. Any project file named ctis.apr will be overwritten.

Scale

A view's scale is displayed on the right hand side of the tool bar. As you zoom in and out on a view or resize the view window, the scale automatically changes to reflect the current scale of the view.

A view's scale is displayed as a scale ratio, like 1:24,000. (For more information about scale, see ArcView Help, "Map Scale and Accuracy.") For ArcView to display the scale of your view correctly, the Map Units of the spatial data in your view must be specified correctly. The Map Units for the CTIS2.apr have already been set.

Scale-dependent Display

Some themes in CTIS2 are scale dependent so that themes with progressively more detail are drawn as you zoom in on an area. A theme's display property defines the range of scales at which the theme may be drawn on a view. When the view's scale is outside this range the theme will not be drawn. For more information, see ArcView Help, “Scale-dependent Display.”

See the table: **Views with Themes Set for Scale-dependent Viewing** for views and themes that have scale-dependent display assigned in Theme Properties.

Views with Themes Set for Scale-dependent Viewing

View	Theme	Scale	
Airport by Functional Class	None		
Existing and Planned Projects	Ports	Maximum	1:250,000
	Railroads	Maximum	1:250,000
	SH Shields	Maximum	1:1,200,000
	Urban	Minimum	1:700,000
MPO Regions	Ports	Maximum	1:250,000
	Railroads	Maximum	1:250,000
	Urban	Minimum	1:700,00
Non-MPO Regions	Ports	Maximum	1:250,000
	Railroads	Maximum	1:250,000
	Urban	Minimum	1:700,000
Projects by Legislative Boundaries	Ports	Maximum	1:250,000
	Railroads	Maximum	1:250,000
Projects by Population	Airports	Maximum	1:250,000
	Ports	Maximum	1:250,000
	Railroads	Maximum	1:250,000
Rail	None		

Data Organization

The data layers, or themes, in the CTIS2 project directory have been broken into three subdirectories:

\ctis_shapes	CTIS project data
\lib_cust_shapes	standard library shapes that have been modified for the CTIS project
\lib_shapes	standard GIS Data Library files; base data for reference

New and Updated Reference Data Layers (as of 1/5/06)

Theme Name	Shapefile name	GIS Library Origin Data
Water	Lake500.shp	Lake500
Places	Plactis.shp	Places
Assembly	Assemb.shp	Assem00a
Senate	Senate.shp	Senate00a
Congress	Congress.shp	Congr00a
MPO Boundaries	Mpo_dot.shp	Mpo_dot

The names and field definitions of all the project and library data files can be found in the metadata document: http://www.dot.ca.gov/hq/tpp/offices/osp/ctis_metadata.pdf

1. Find the “municipal.avp” – highlight it.
2. You should still be in the Marker Palette dialog
3. Double-click on the icon that you want to change
4. Drag the slider bar down to the bottom
5. Select either an airplane or train icon
6. Repeat for other themes that need a new icon
7. Close the dialog by clicking on the “X.” (For more information, see ArcView Help Topic: “symbol window, customizing symbol palettes”)

User Responsibility

While the Office of State Planning strives to provide accurate and updated information, it is the responsibility of the user to ensure data sets are updated and to apply the information in a professional manner using one's best judgment. CTIS includes data that are complete and accurate to the best of our knowledge prior to release date. Some of the data sets included with CTIS are highly dynamic and may quickly become outdated. Please refer to the “CTIS Representatives and Contacts Information” section to find out about updating data sets.

Note: When preparing map layouts, a printed date and contact name should also be printed on the map.

Sharing CTIS Data Layers

- The CTIS 2 Tool can be provided to any Caltrans partner.
- All themes can be used independently of the CTIS 2 Tool, including the standard and custom library shapes. *Caution: Users should access the Caltrans GIS Data Library webpage for the most current dataset*
- http://www.dot.ca.gov/hq/tsip/TSIPGSC/library/libdatalist.htm
- CTIS data shapefiles can be downloaded directly from the Caltrans GIS Data Library webpage.

Disclaimers and Details

1. All dollars ($) shown in 1,000s unless otherwise noted.
2. CTIPS (California Transportation Improvement Program System) data is a snapshot from November 2004. For more current cost information on programmed projects, consult CTIPS database or CTIPS contacts at http://ctips.dot.ca.gov/citrix/metaframexp/default/login.asp?ClientDetection=On.
3. A breakout of CTIPS project costs by phases (e.g., PS&E-plans, specifications and estimates) can be viewed by selecting those fields in table properties. In some cases, the ”Total Cost” field may have been revised after review by the local Caltrans District to reflect more up-to-date information. Where this occurred, total costs of all phases (PS&E, RW, CON, etc.) may not equal total cost field.
4. Costs shown for planned projects taken from Regional Transportation Plans (RTPs) reflect most recently adopted RTP at the time of data update. Check “Document Year” field for year of adoption.

Tool Specifics

Overview

The CTIS Tool is a customized ArcView project designed to display the Planned and Programmed projects included within the Tool. The Tool contains eleven (11) thematic views. The CTIS program and user community developed the content and display characteristics of these views. Each view has one customized menu and five (5) customized buttons.

Definitions

View: provides a means to display and query a collection of user-defined themes.

Theme: represents all the features of a particular feature class in the data source it is based on. However it is useful to be able to restrict a theme to represent only a subset of the features in a particular feature class.

Legend: contains information necessary to display a theme's features using different symbolization schemes.

Views in the CTIS2 Tool

Existing and Planned Projects – This view contains all of the planned and programmed project data in themes using symbolization schemes to differentiate between the themes.

Airports by Functional Class – These projects have been mapped to the actual airport locations. The airports themselves can be viewed either by all airports in the state or by the classification of the facility (commercial, metropolitan, community, etc.)

Projects by Metropolitan Planning Organization (MPO) and Non-MPO Boundaries – These views are intended to allow the user to view and sort projects according to location within MPO boundaries, or by location in counties not included within an MPO.

Projects By Legislative Boundaries – This view allows projects to be sorted by legislative district (State senate and assembly, and US congressional districts). The district boundaries have been updated to reflect the 2000 redistricting based on the US census.

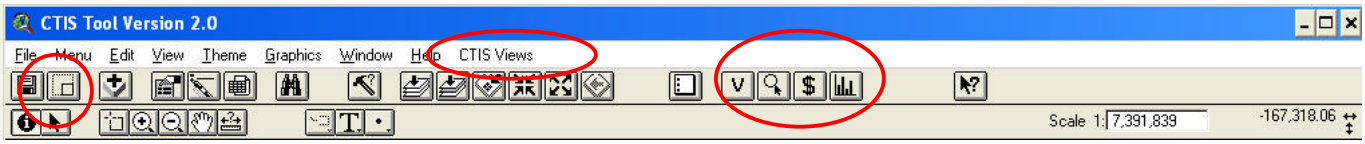
Projects By Population - Four customized themes were developed for population in this view.

1. Population Increase 1980-2000
2. Population Increase 2000-2020
3. County Population 2000
4. County Population 1990

These themes were generated using population from US Census and joined to the County Boundary shapefile from the Caltrans GIS Data Library.

Rail – This view is designed to allow the CTIS projects to be viewed in the context of proximity to railroad facilities.

Customized Graphical User Interface (GUI)



CTIS Views

The customized "CTIS Views" menu allows the user to switch to a view by selecting the name of the view in the pull-down list rather than using the full-screen window that appears when the tool is first opened.

Customized Buttons

The customized buttons allow the user to perform some common functions and specialized analyses of the data with the push of a single button.

Resize Window Button

The Resize Window button is next to the Save button to allow resizing of the view window to fit your current display device.

Open View Pick List

This button opens the full screen pick list that appears when the project is first opened. This button is visible on all views.

Select Projects by Distance

Clicking on this button opens a dialog box requesting input by the user. It will select Highway, Airport, Local and Rail projects that are a user specified distance (in miles) from Highway Border Crossings, Airports, Ports or Railroad Stations (Note: in order to select from the range of project types, the project theme must appear in the current view). The user can select a single or multiples of feature(s) by holding down the shift key while selecting the feature. Clicking on the OK button closes the dialog box and displays the selected projects in yellow.

Sum Project Costs

This button generates a chart that displays the total number and total cost of projects by theme for the geography identified by the user or the whole State. The sum total at the bottom is the sum of the totals reported by category. Sums may be Statewide, Caltrans

District, individual County, or individual Regional Transportation Planning Agency (RTPA). This button is visible on all views.

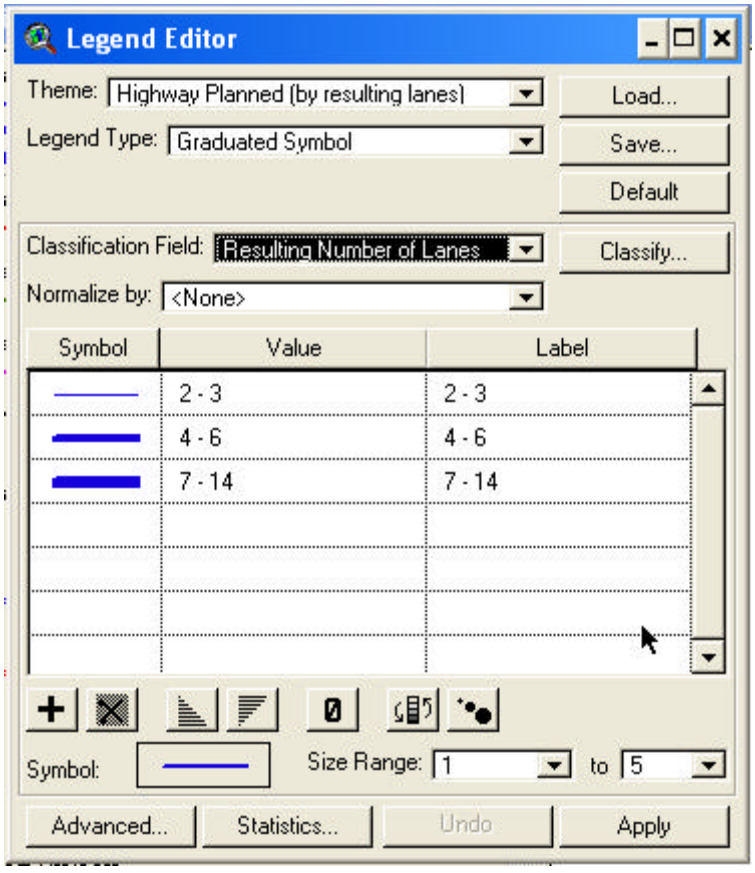
Planned Projects Cost Summary by Purpose Code

This button displays a histogram of the summary of the costs of Planned projects by Purpose Code. Clicking on this button opens a dialog box requesting input by the user. The available options are Statewide, Caltrans District, County, or Regional Transportation Planning Agency (RTPA). When the unit of analysis is not Statewide, an option to select an “Area” becomes available. The Area is a pull-down list created from the data that is populated in the database, and is relevant to the unit of analysis selected. This button is visible on all views.

The “Planned Projects Cost Summary by Purpose Code” chart, once generated, may need to be adjusted to fit in the display device (computer monitor or screen).

Legends (Data Classifications)

State Highway – Planned Projects



The “Highway Planned” theme has been classified using the values of the “Resulting Number of Lanes” field.

Metadata

The metadata for the CTIS tool may be accessed in the main CTIS tool directory or via the Transportation System Information Program website:

http://www.dot.ca.gov/hq/tpp/offices/osp/ctisdocs/CTIS2_metadata.PDF

Data Descriptions and Definitions

For more detailed description of data including code definitions, please see the CTIS_v2.0_DataDictionary.xls file in the main CTIS tool directory or posted at:

http://www.dot.ca.gov/hq/tpp/offices/osp/CTIS_v2.0_DataDictionary.xls

CTIS Representatives and Contact Information

Questions regarding the CTIS tool can be directed to the following Caltrans District or Headquarters staff:

Caltrans District	Representative	Public Phone	CALNET (8)	Email
1 - Eureka	Brandon Larson	(707) 441-3926	538-3926	Brandon_larson@dot.ca.gov
2 - Redding	Scott White	(530) 229-0518	442-0516	Scott_white@dot.ca.gov
3 - Marysville	Bruce de Terra	(916) 274-0614	467-0614	Bruce_de_terra@dot.ca.gov
4 – Bay Area	Haiyan Zhang	(510) 622-1641	541-1641	Haiyan_zhang@dot..ca.gov
5 – San Luis Obispo	Carl Hilbrants	(805) 549-3682	629-3682	Carl_hilbrants@dot.ca.gov
6 - Fresno	Stacy Bar	(559) 488-7364	488-7364	Stacy_bar@dot.ca.gov
7 – Los Angeles	Ruby Parker	(213) 897-1343	647-1343	Ruby_l_parker@dot.ca.gov
8 – San Bernardino	Rusty Thorton	(909) 383-6324	670-6324	Rusty_thorton@dot.ca.gov
9 – Bishop	Dave Bloom	(760) 872-0689	627-0689	Dave_Bloom@dot.ca.gov
10 – Stockton	Jim Pastore	(209) 948-7115	423-7115	Jim_pastore@dot.ca.gov
11 – San Diego	Farnaz Badiei	(619) 688-3194	688-3194	farnaz_badiei@dot.ca.gov
12 – Orange County	Betty Alivio	(949) 724-2035	655-2035	Betty_alivio@dot.ca.gov
HQ – 1,2,6, 8, 9, 12 (Lead)	Sabrina Watts	(916) 653-9169	453-9169	sabrina_watts@dot.ca.gov
HQ – 3,4, 5, 7,10, 11	Ann Mahaney	(916) 653-5708	453-5708	ann_mahaney@dot.ca.gov